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CLAIMS

1. Apparatus for forming an incision of a controlled size in a blood vessel, comprising:
a sterile penetration tip which is adapted to pierce a wall of the blood vessel; and
an arcuate section having a cutting edge defined on an inner portion thereof, extending
from said penetration tip,
wherein said arcuate section defines at least one incision length marking thereon.
2. Apparatus according to claim 1, wherein said tip is adapted to pierce said wall without
tearing.
3. Apparatus according to claim 1, comprising a handle extending from said arcuate
section on an opposite end of said arcuate section.
4. Apparatus according to claim 1, wherein said arcuate section defines at least two
incision length markings thereon.
5. Apparatus according to claim 1, wherein said arcuate section defines at least two
incision length markings, associated with different incision lengths, thereon.
6. Apparatus according to claim 3, wherein said tip, arcuate section and handle lie in a
plane.
7. Apparatus according to claim 1, said apparatus includes a cutting edge only on said
arcuate section on an inner portion thereof.
8. Apparatus according to claim 1, wherein a non-cutting section is defined between a
forward tip of said penetration tip and said cutting edge, said non-cutting section being longer
than 0.5 mm.
9. Apparatus according to claim 1, wherein said cutting edge has a linear extent of less
than 20 mm.

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10. Apparatus according to claim 1, wherein said cutting edge has a linear extent of less than 10 mm.
11. Apparatus according to claim 1, wherein said cutting edge has a linear extent of less than 5 mm.
12. Apparatus for forming an incision of a controlled size in a blood vessel, comprising:
a sterile penetration tip which is adapted to pierce a wall of the blood vessel;
a body extending from said tip; and
a cutting guide defined on said body.
13. Apparatus according to claim 12, comprising a frame adapted to lock said wall between said frame and said body, from outside the blood vessel.
14. Apparatus according to claim 12, wherein said cutting guide comprises a slot sized to receive a cutting blade suitable for cutting blood vessel walls.
15. Apparatus according to claim 14, wherein said slot is marked with distance markers.
16. Apparatus according to claim 14, wherein said slot has a far end at a point less than 20 mm from said penetration tip.
17. Apparatus according to claim 14, wherein said slot has a far end at a point less than 10 mm from said penetration tip.
18. Apparatus according to claim 13, wherein said frame is attached to said body by a hinge.
19. Apparatus according to claim 13, wherein said frame comprises a cutting stop adjacent said penetration tip and past an end of said cutting guide.
20. Apparatus according to claim 12, wherein said penetration tip is adapted to pierce said blood vessel without causing a tear.

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21. Apparatus according to claim 12, wherein said body is straight.
22. A method of forming an incision in a blood vessel, comprising:
 - (a) inserting a penetration tip into a blood vessel, forming a puncture;
 - (b) fixing said penetration tip so that it maintains a fixed axial position relative to an axis of the blood vessel; and
 - (c) cutting a linear aperture guided by an extension of said penetration tip.
23. A method according to claim 22, wherein fixing comprises penetrating said penetration tip out of said blood vessel.
24. A method according to claim 22, wherein fixing comprises locking said blood vessel to said extension of said tip using a frame on the outside of the blood vessel.
25. A method according to claim 22, comprising, determining an expected incision length prior to said cutting.
26. A method according to claim 25, comprising, removing said fixing if said expected length is not a desired length.
27. A method according to claim 22, comprising, removing said penetration tip and repeating (a)-(b) to achieve a desired expected incision length.
28. A method according to claim 22, wherein cutting comprises comprising retracting said extension to form a cut.
29. A method according to claim 22, wherein cutting comprises guiding a knife along said penetration tip to form a cut.
30. A method of cutting an incision in a blood vessel, comprising:
 - (a) inserting a front tip of a sickle shaped cutter into a blood vessel;
 - (b) manipulating said tip to exit the blood vessel at a different point;

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- (c) checking a marking on the cutter to estimate a resulting incision length; and
- (d) retracting said sickle shaped cutter to cut the blood vessel, following the checking.
31. A method according to claim 30, comprising repositioning said tip prior to said retracting, to exit said blood vessel at a further different point.
32. A method according to claim 30, wherein said blood vessel is only punctured by said tip and is not damaged in any other way by the sickle cutter, prior to (d).
33. An evaluator adapted for evaluating a blood vessel, comprising:
- a flat elongate element having a width;
 - at least two slots of different opening sizes extending through a portion of the width and adapted to receive a blood vessel therein; and
 - at least one first edge gauge along the element, the edge gauge having a first dimension,
- wherein said first dimension is of an incision length in a side vessel suitable for an end-to-side anastomotic connection using an everted blood vessel having the diameter between the two opening sizes.
34. An evaluator according to claim 33 and including at least one third slot extending through a portion of the width, the at least one third slot having an opening of a size greater than the other two slots.
35. An evaluator according to claim 34 and including at least one second edge gauge, the edge having a second dimension of an incision length in a side vessel suitable for an end-to-side anastomotic connection using an everted blood vessel having the diameter between the greater size and the two opening sizes.
36. An evaluator according to claim 33 and including a marking section adapted for marking a blood vessel, said marking section being at said end gauge.
37. An evaluator according to claim 36, wherein said marking section is at an edge of said end gauge.

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38. A sterilized marking evaluator adapted for evaluating a blood vessel comprising:
a flat elongate element having a width;
at least one first edge gauge along the element, the edge gauge having a first dimension; and
a marking section adapted for marking a blood vessel, said marking section being at or near said edge gauge.
39. A marking evaluator according to claim 38, wherein said first dimension is smaller than 6 mm.
40. A marking evaluator according to claim 38, wherein said marking section is at an edge of said edge gauge.
41. A marking evaluator according to claim 38, comprising a cap to protect said marking section when not in use.
42. A marking evaluator according to claim 38, comprising a second edge gauge with a second dimension and a second marking section thereat.
43. A marking evaluator according to claim 38, wherein said marking section is near said edge.
44. A method of cutting an aperture in a blood vessel, comprising:
contacting said vessel with a marker having a fixed marking length; and
cutting along said marking.
45. A method according to claim 44, comprising measuring a finished aperture with said marker.
46. A method according to claim 44, comprising inking said fixed marking length prior to said contacting.
47. A method of cutting an aperture in a blood vessel, comprising:

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inserting a penetration tip into a blood vessel at a point;
visually identifying on the blood vessel a desired incision, starting at said point; and
cutting according to said visual guiding.